

Claims

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1. A lockable nut system for threaded steel bar having a non circular cross sectional shape with at least one planar side wall, said lockable nut system comprising:

a screw threaded nut rotatably engageable on said threaded steel bar; and

a locking member slidably engageable on said threaded steel bar, said locking member being adapted in use to resist rotation about said bar, said nut and said locking member being axially engageable whereby in use said locking member resists rotation in at least one direction of said nut on said bar.

2. The lockable nut system as claimed in claim 1 wherein said locking member has a non-circular cross-section aperture generally complementary to said non-circular cross-sectional shape of said bar.

3. The lockable nut system in claim 2 wherein said locking member includes at least one inner side wall engageable with a respective side wall of said bar.

4. The lockable nut system as claimed in claim 1 wherein said nut and said locking member are axially engageable by one or more socket and spigot formations on respective adjacent ends of said nut and said locking member.

5. The lockable nut system as claimed in claim 2 wherein said locking member is a tubular member.

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6. The lockable nut system as claimed in claim 2 wherein said

locking member has a generally disc-like body.

7. The lockable nut system as claimed in claim 6 further including:-

at least one nut engaging element projecting axially from the locking member; and

at least one actuating element deformable from a first to a second position, in use, urging the at least one nut engaging element into engagement with the at least one recess in the nut.

8. The lockable nut system of claim 7, wherein the at least one nut engaging element comprises a finger.

9. The lockable nut system of claim 7, wherein the at least one actuating element comprises one or more tabs deformable under compression by said nut.

10. The lockable nut system of claim 7 including a bar engaging member comprising:-

at least one bar engaging element projecting axially from the locking member; and

at least one bar engaging actuating element deformable from a first position to a second position thereby urging the bar engaging element towards the threaded steel bar.

11. A lockable nut system for threaded steel bar having a non circular cross sectional shape, said lockable nut system comprising:

a screw threaded nut rotatably engageable on said threaded steel bar;

and

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

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a locking member slidably engageable on said threaded steel bar, said locking member comprising a generally disc shaped body having a cross sectional aperture therein, and aperture having a shape generally complementing to the cross section shape of the bar to resist rotation about said bar, said nut and said locking member being axially engageably whereby in use said locking member resists rotation in at least one direction of said nut on said bar.

12. The lockable nut system of claim 11 wherein said locking member includes at least one inner side wall engageable with a respective side wall of said bar.

13. The lockable nut system of claim 11 wherein said nut and said locking member are axially engageable by one or more socket and spigot formations on respective adjacent ends of said nut and said locking member.

14. The lockable nut system of claim 11 further including:-

at least one nut engaging element projecting axially from the locking member; and

at least one actuating element deformable from a first to a second position, in use, urging the at least one nut engaging element into engagement with the at least one recess in the nut.

15. The lockable nut system of claim 14, wherein the at least one nut engaging element comprises a finger.

16. The lockable nut system of claim 14 wherein the at least one actuating element comprises one or more tabs deformable under compression from said nut.

18. The lockable nut system of claim 17, wherein the bar engaging member comprises:

at least one bar engaging actuating element deformable from a first position to a second position thereby urging the bar engaging element towards the threaded steel bar.

19. A locking member for the lockable nut system of claim 11, said locking member comprising a generally toroidal body, said body comprising at least one axially projecting finger and at least one finger actuating tab wherein in use, deformation of the at least one finger actuating tab from a first position inclined to a transverse plane of the body to a second position substantially co-planar with the transverse plane of the body urges an end of said at least one axially projecting finger outwardly to engage an adjacent inner end of a nut to resist rotation thereof.

20. A locking member for the lockable nut system of claim 11, said locking member comprising generally toroidal body, said body comprising at least one axially projecting finger, at least one finger actuating tab wherein in use deformation of the at least one finger actuating tab from a first position inclined to a transverse plane of the body to a second position substantially co-planar with the transverse plane of the disc urges an end of said at least

21. A locking member for a lockable nut system of claim 19 further comprising at least one bar engaging tongue and at least one tongue actuating tab wherein deformation of the at least one tongue actuating tab from a first position inclined to a transverse plane of the body to a second position substantially co-planar with the transverse plane of the body urges an end of the bar engaging tongue inwardly towards a generally planar face of said threaded steel bar.

22. A locking member for a lockable nut system of claim 20 further comprising at least one bar engaging tongue and at least one tongue actuating tab wherein deformation of the at least one tongue actuating tab from a first position inclined to a transverse plane of the body to a second position substantially co-planar with the transverse plane of the body urges an end of the bar engaging tongue inwardly towards a generally planar face of said threaded steel bar.

23. A lockable nut system as claimed in claim 11 wherein said generally toroidal body is at least partially dished.

24. A lockable nut system for threaded steel bar having a non circular cross sectional shape with at least one planar side wall, said lockable nut system comprising:-

a screw threaded nut rotatably engageable on said threaded steel bar, said nut including a coaxially aligned outwardly divergent frusto conical engagement surface at one end thereof; and,

a locking member slidably engageable on said threaded steel bar, said locking member being engageable with said at least one planar side wall of said bar to resist relative rotation therebetween, said locking member including at least one nut engaging finger engageable against said frusto conical engagement surface of said nut to resist axial separation between said nut and said locking member when engaged.

25. The lockable nut system of claim 24 wherein said locking member comprises a deformable generally toroidal non planar body, said body, in use, being compressible by said nut to a generally planar state to urge said at least one nut engaging finger into engagement with said frusto conical engagement surface.

26. The lockable nut system of claim 24 wherein said frusto conical engagement surface is contoured whereby in use, relative rotation between said nut and said locking member is resisted by engagement between said at least one nut engaging finger and said contoured surface.

27. The lockable nut system of claim 26 wherein said at least one nut engaging finger is tapered in an outwardly divergent manner from a base connection with said body.

28. The lockable nut system of claim 24 further including at least one deformable tab depending from said body, said tab, in use, being engageable against said at least one planar face of said bar to resist relative rotation therebetween.

29. The lockable nut system of claim 28 wherein said at least one deformable tab includes an inwardly inclined portion attached to said body,

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